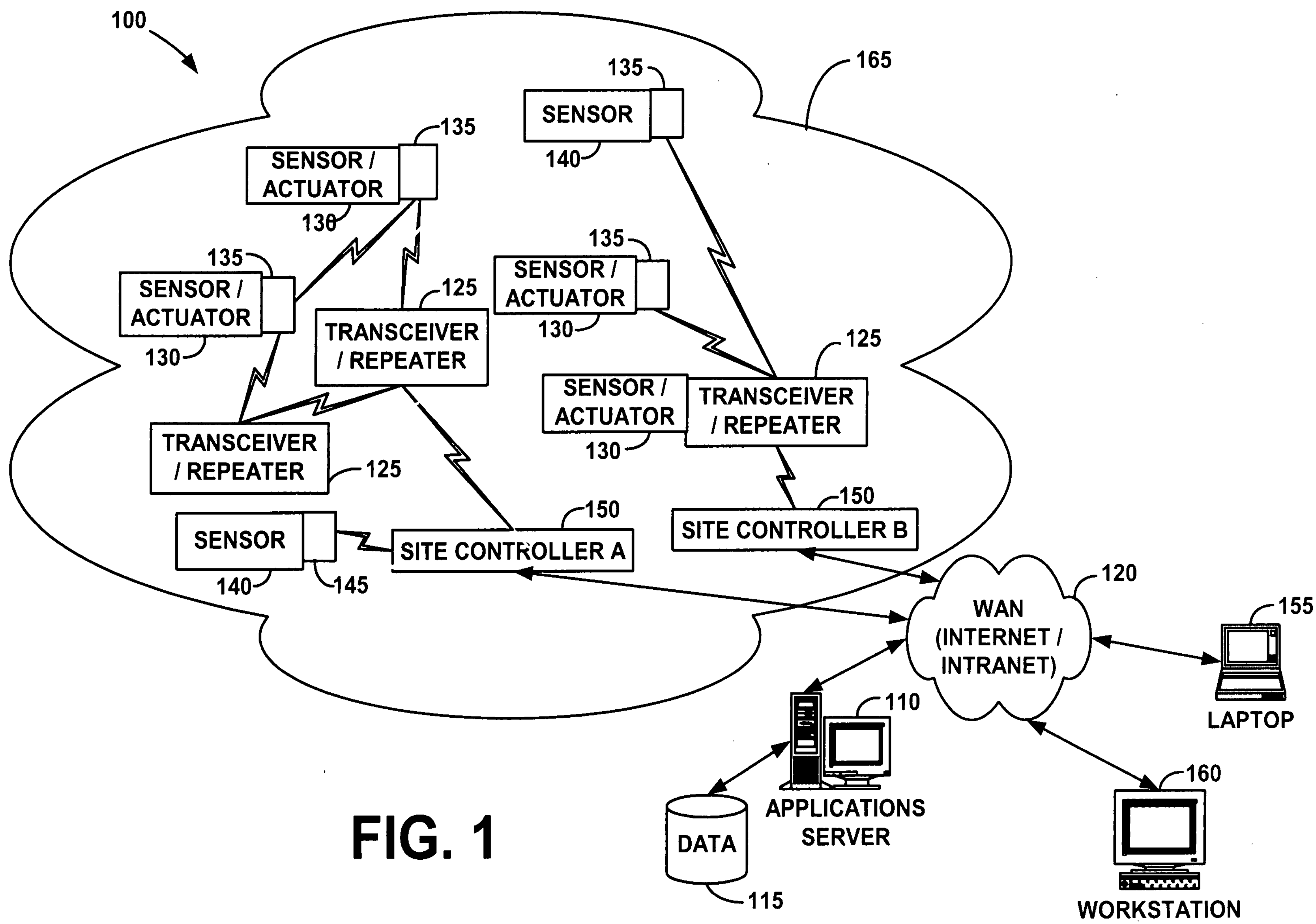

100
165
135
SENSOR
140
135
SENSOR / ACTUATOR
130
135
SENSOR / ACTUATOR
130
125
TRANSCEIVER / REPEATER
135
SENSOR / ACTUATOR
130
125
SENSOR / ACTUATOR
TRANSCEIVER / REPEATER
130
TRANSCEIVER / REPEATER
125
150
SITE CONTROLLER B
150
SENSOR
SITE CONTROLLER A
140
145
120
WAN (INTERNET / INTRANET)
155
LAPTOP
110
APPLICATIONS SERVER
DATA
115
160
WORKSTATION

FIG. 1

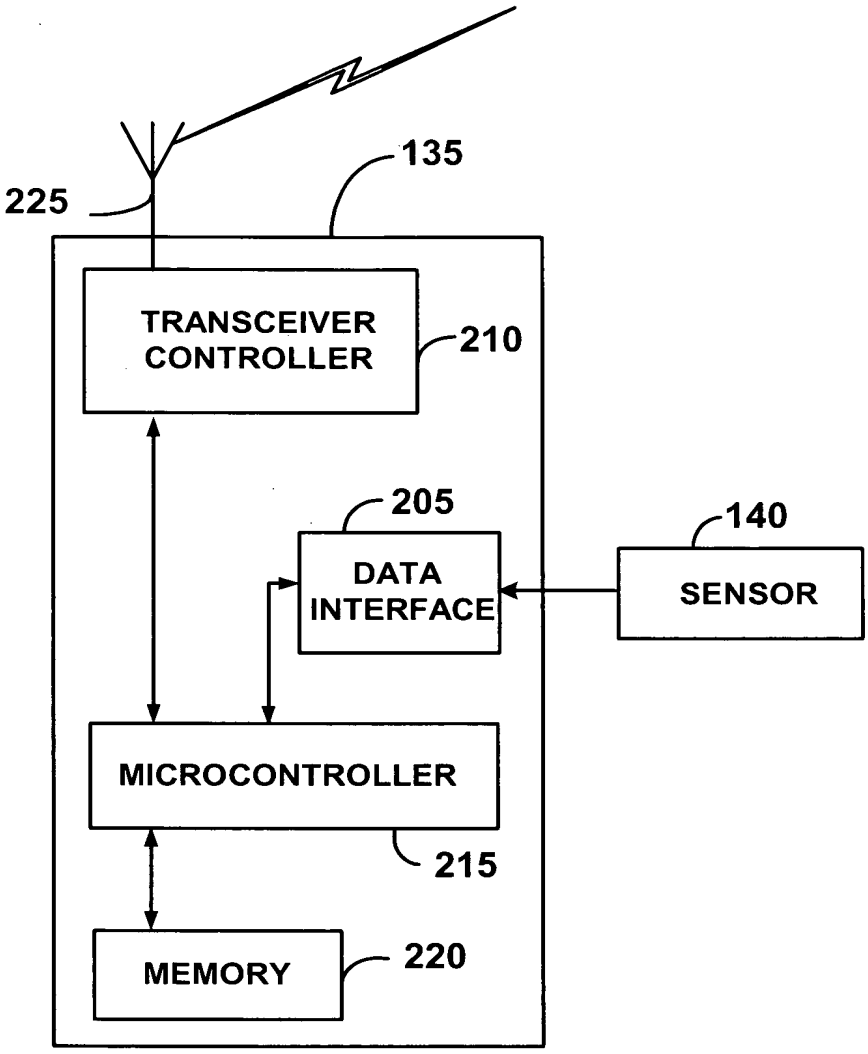

225
135
TRANSCEIVER CONTROLLER
210
205
DATA INTERFACE
140
SENSOR
MICROCONTROLLER
215
MEMORY
220

FIG. 2

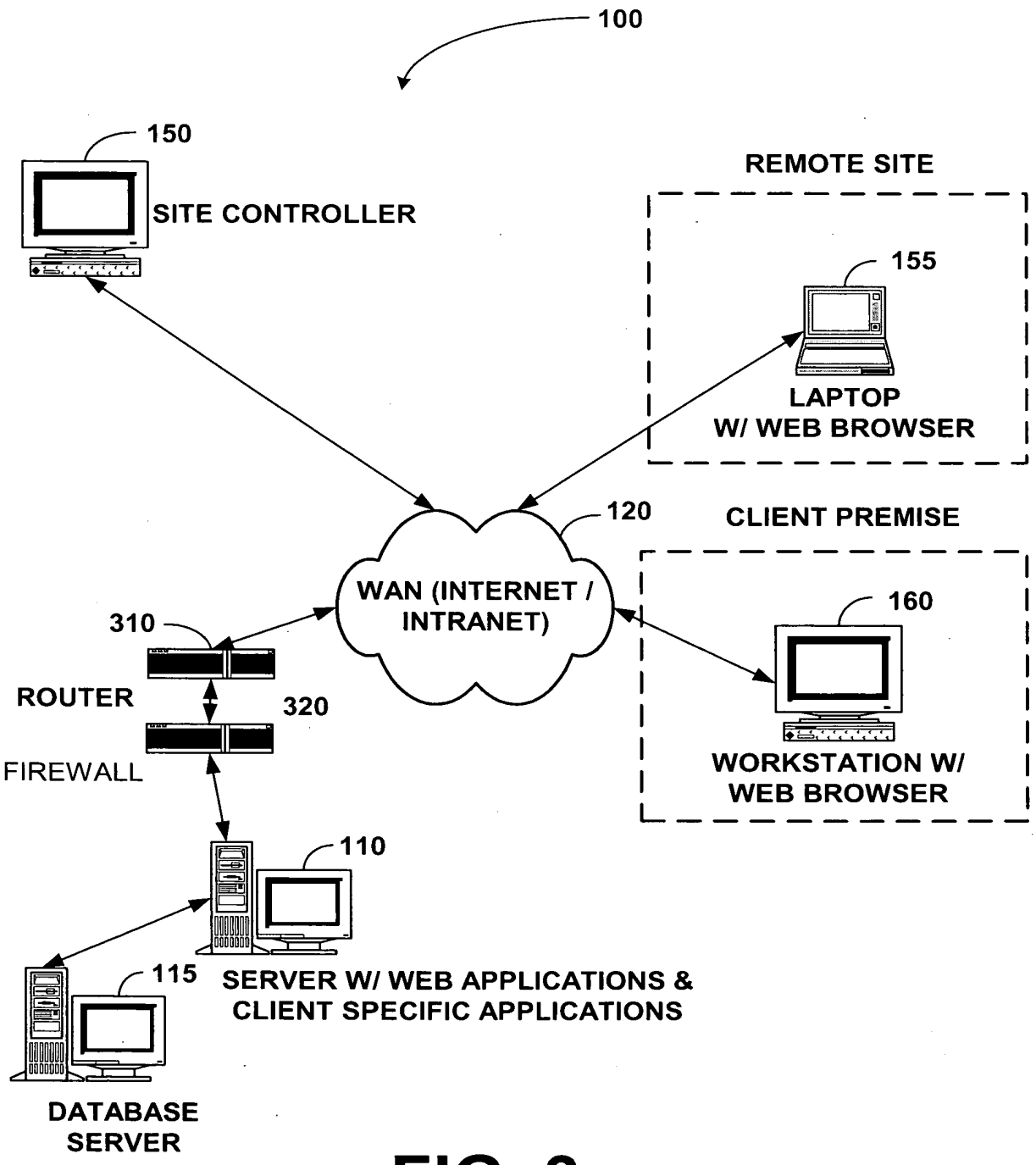

100
150
SITE CONTROLLER
REMOTE SITE
155
LAPTOP
W/ WEB BROWSER
120
CLIENT PREMISE
WAN (INTERNET /
INTRANET)
160
310
ROUTER
320
FIREWALL
WORKSTATION W/
WEB BROWSER
110
115
SERVER W/ WEB APPLICATIONS &
CLIENT SPECIFIC APPLICATIONS
DATABASE
SERVER

FIG. 3

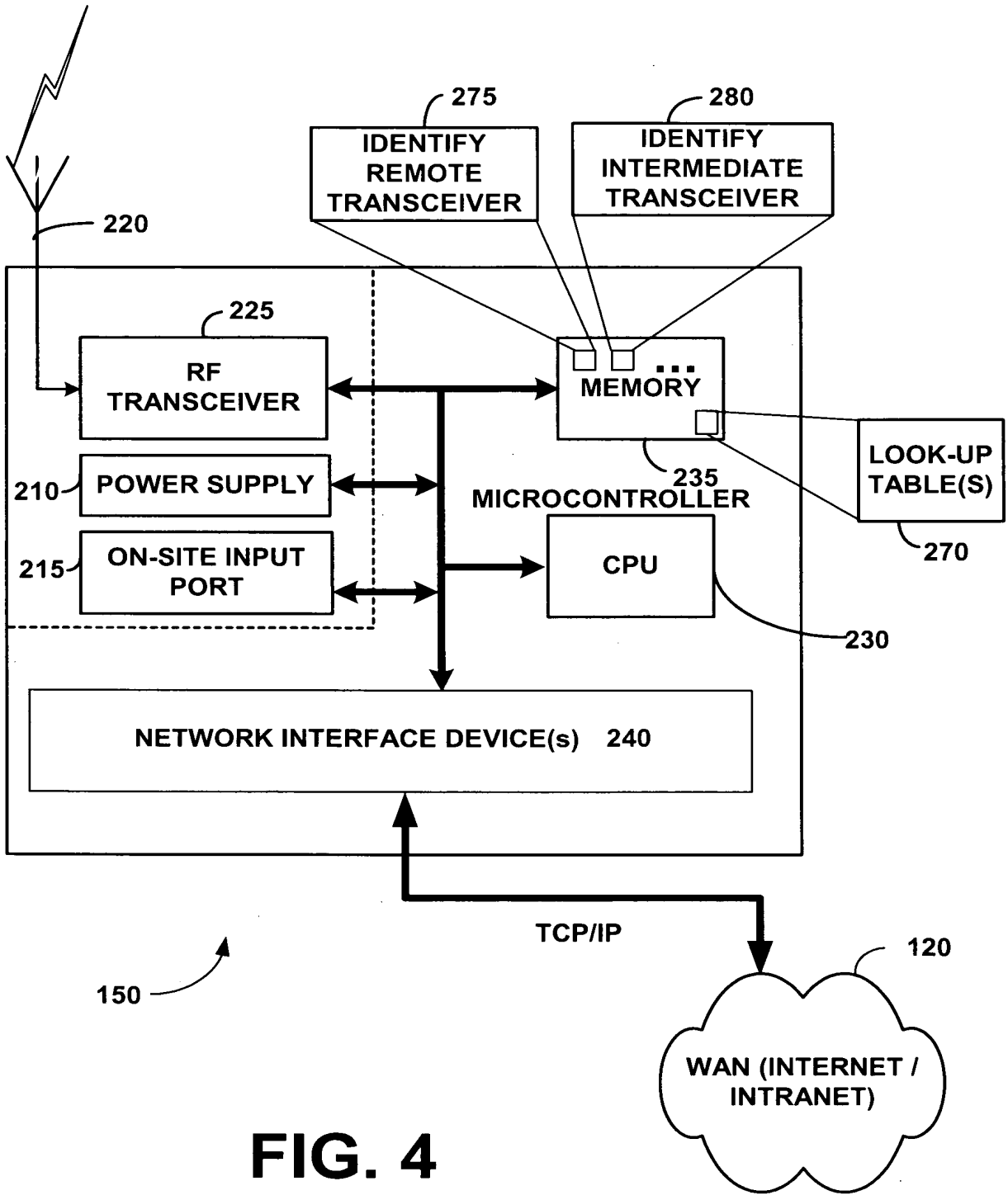
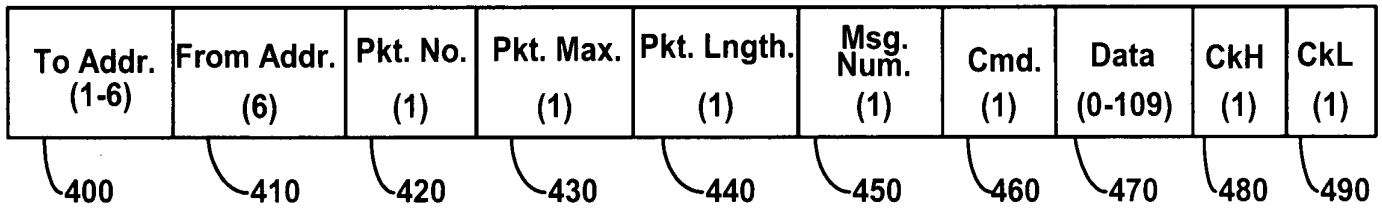

275
IDENTIFY REMOTE TRANSCEIVER
280
IDENTIFY INTERMEDIATE TRANSCEIVER
220
225
RF TRANSCEIVER
MEMORY
LOOK-UP TABLE(S)
270
235
210
POWER SUPPLY
MICROCONTROLLER
215
ON-SITE INPUT PORT
CPU
230
NETWORK INTERFACE DEVICE(s) 240
TCP/IP
120
150
WAN (INTERNET / INTRANET)

FIG. 4

FIG. 5 Message Structure



"To Address"	Byte Assignment:
MSB - Byte 1 Device Type	FF-F0 (16) - Broadcast All Devices (1 Byte Address) EF-1F (224) - Device Type Base (2 to 6 Byte Address) 0F-00 (16) - Personal Transceiver Identification (6 Byte Address)
Byte 2 Mfg./Owner ID	FF-F0 (16) - Broadcast all Devices (Byte 1 Type) (2 Byte Broadcast Address) EF-00 (240) - Mfg./Owner Code Identification Number
Byte 3 Mfg./Owner Extension ID	FF-F0 (16) - Broadcast all Devices (Byte 1 & Byte 2 Type) (3 Byte Broadcast Address) EF-00 (240) - Device Type/Mfg./Owner Code ID Number
Byte 4	FF-F0 (16) - Broadcast all Devices (Byte 1 & Byte 2 Type) (4 Byte Broadcast Address) EF-00 (240) - ID Number
Byte 5	(FF-00) 256 - Identification Number
Byte 6	(FF-00) 256 - Identification Number

FIG. 6

Sample Messages

Central Server to Personal Transceiver - Broadcast Message - FF (Emergency)

Byte Count = 12

600

To Addr. (FF)	From Addr. (12345678)	Pkt. No. (00)	Pkt. Max. (00)	Pkt. Lngth. (0C)	Cmd. (FF)	CkH (02)	CkL (9E)

First Transceiver to Repeater (Transceiver)
Broadcast Message - FF (Emergency)

602

Byte Count = 17

To Addr. (F0)	From Addr. (12345678)	Pkt. No. (00)	Pkt. Max. (00)	Pkt. Lngth. (11)	Cmd. (FF)		CkH (03)	CkL (A0)

Data (A000123456)

Note: Additional Transceiver Re-Broadcasts do not change the message.
The messages are simply received and re-broadcast.

Message to Device "A0" From Device "E1" Command - "08" (Respond to PING)
Response will reverse "To" and "From" Addresses

604

Byte Count = 17

To Addr. (A012345678)	From Addr. (E112345678)	P # (00)	P Max. (00)	P Lngth. (11)	Cmd. (08)	Data (A5)	CkH (04)	CkL (67)

FIG. 7

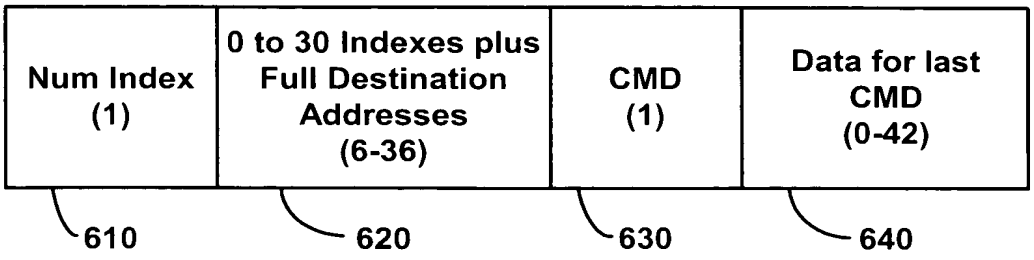

Num Index
(1)
0 to 30 Indexes plus
Full Destination
Addresses
(6-36)
CMD
(1)
Data for last
CMD
(0-42)
610
620
630
640

FIG. 8

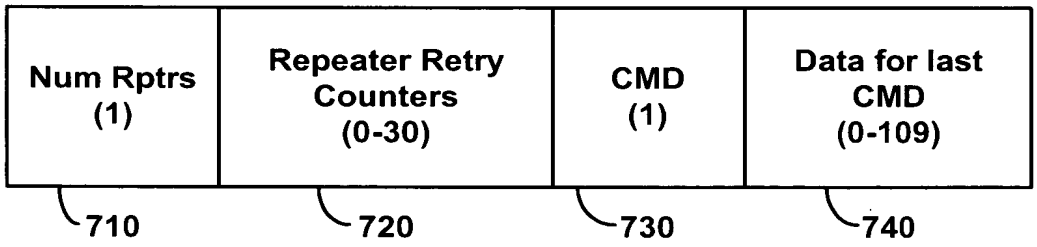

Num Rptrs
(1)
Repeater Retry
Counters
(0-30)
CMD
(1)
Data for last
CMD
(0-109)
710
720
730
740

FIG. 9

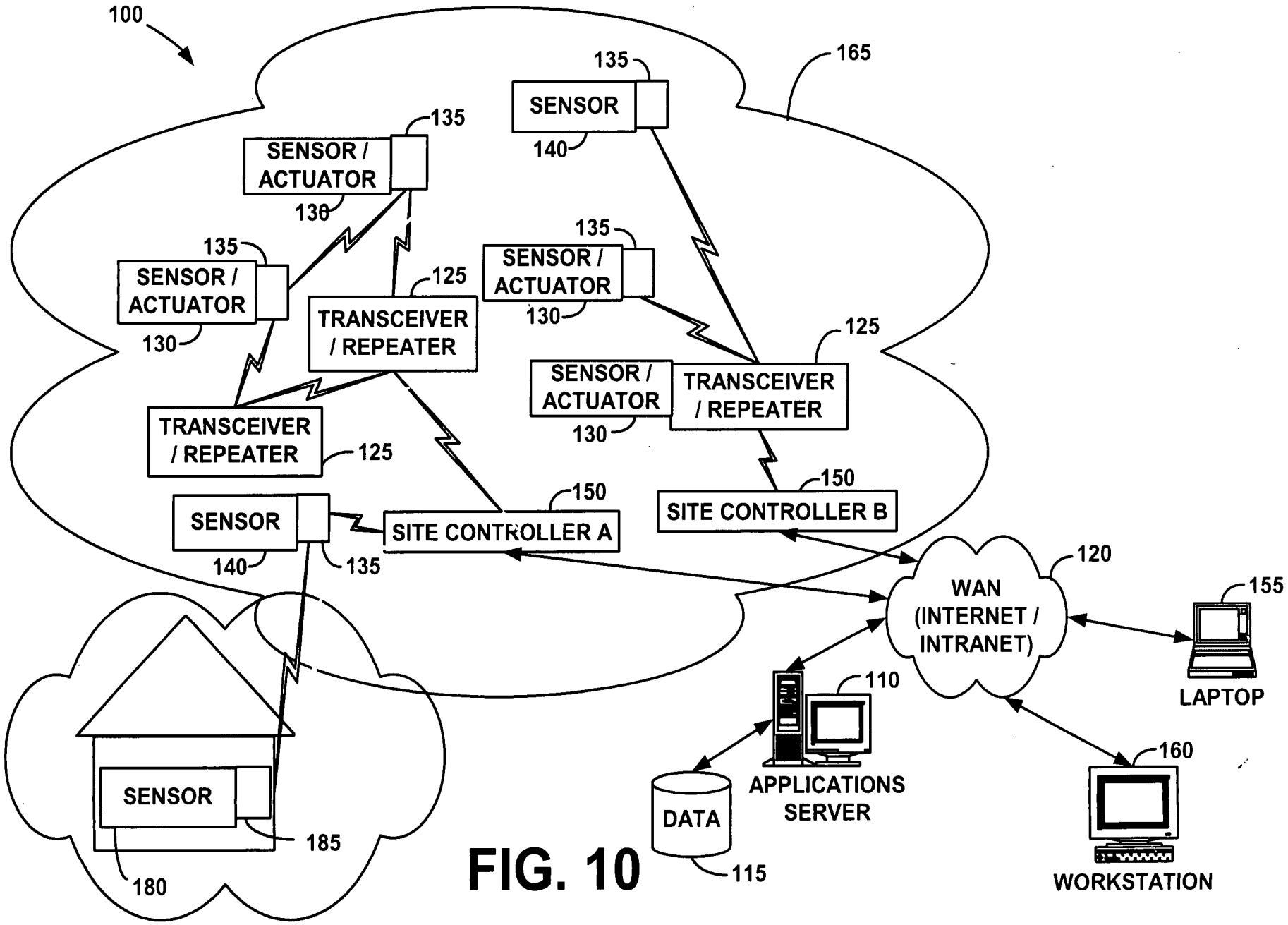

100
165
135
SENSOR
140
135
SENSOR / ACTUATOR
130
135
SENSOR / ACTUATOR
130
125
TRANSCEIVER / REPEATER
135
SENSOR / ACTUATOR
130
125
SENSOR / ACTUATOR
TRANSCEIVER / REPEATER
130
TRANSCEIVER / REPEATER
125
150
SITE CONTROLLER B
SENSOR
140
135
150
SITE CONTROLLER A
120
WAN (INTERNET / INTRANET)
155
LAPTOP
110
APPLICATIONS SERVER
DATA
115
160
WORKSTATION
SENSOR
185
180

FIG. 10

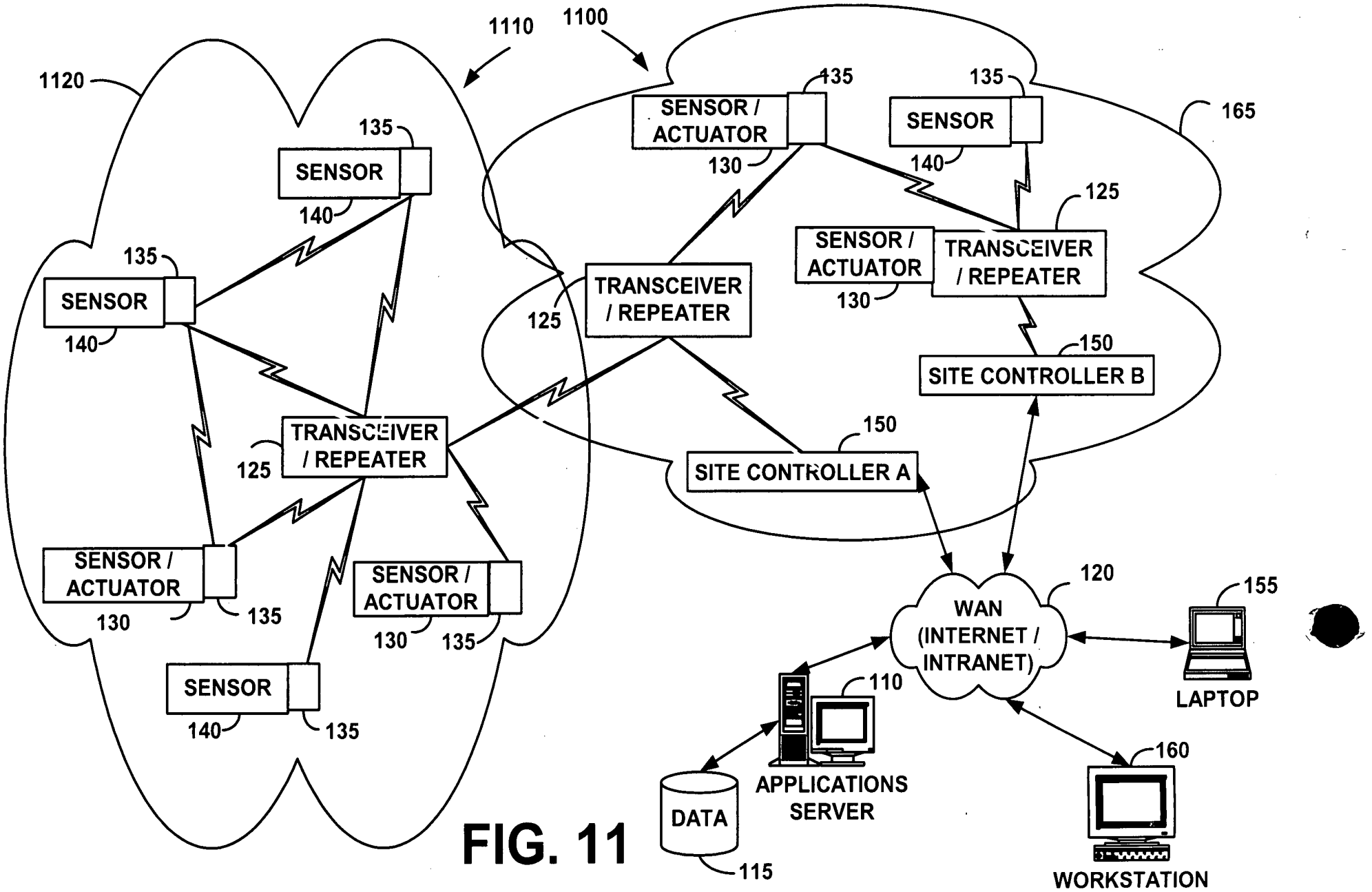

1110
1100
1120
135
SENSOR
140
135
SENSOR
140
135
SENSOR / ACTUATOR
130
135
SENSOR
140
165
125
TRANSCEIVER / REPEATER
SENSOR / ACTUATOR
130
TRANSCEIVER / REPEATER
125
150
SITE CONTROLLER B
150
SITE CONTROLLER A
TRANSCEIVER / REPEATER
125
SENSOR / ACTUATOR
130
135
SENSOR / ACTUATOR
130
135
SENSOR
140
135
120
WAN (INTERNET / INTRANET)
155
LAPTOP
110
APPLICATIONS SERVER
DATA
115
160
WORKSTATION

FIG. 11